

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 8-23 have been canceled and claims 24-39 have been added as follows:

Listing of Claims:

Claims 8-23 (canceled)

Claim 24 (new): An expander comprising a cylinder, a shaft having an eccentric portion, a roller which is fitted to said eccentric portion and which eccentrically rotates inside said cylinder, a closing member for closing both end surfaces of said cylinder, a vane for partitioning a space formed by said cylinder, said roller and said closing member into a plurality of working chambers, a suction hole through which working fluid flows into said working chamber, and a discharge hole through which the working fluid is discharged from said working chamber into a discharge space, wherein said discharge hole is provided with a differential pressure regulating valve which is operated by a difference between pressure in said working chamber and pressure in said discharge space.

Claim 25 (new): The expander according to claim 24, wherein said differential pressure regulating valve is closed when the pressure in said working chamber is lower than the pressure in said discharge space.

Claim 26 (new): The expander according to claim 25, wherein said differential pressure regulating valve is a reed valve.

Claim 27 (new): The expander according to claim 25, wherein said differential pressure regulating valve has a circular conical valve portion.

Claim 28 (new): The expander according to claim 24, wherein fluid which expands from liquid phase or supercritical phase to gas-liquid two-phase is used as the working fluid.

Claim 29 (new): The expander according to claim 28, wherein the expander is utilized in a heat pump cycle which uses carbon dioxide as the working fluid.

Claim 30 (new): The expander according to claim 29, wherein a shaft of said expander is directly connected to a shaft of a compressor.

Claim 31 (new): The expander according to claim 25, wherein fluid which expands from liquid phase or supercritical phase to gas-liquid two-phase is used as the working fluid.

Claim 32 (new): The expander according to claim 26, wherein fluid which expands from liquid phase or supercritical phase to gas-liquid two-phase is used as the working fluid.

Claim 33 (new): The expander according to claim 27, wherein fluid which expands from liquid phase or supercritical phase to gas-liquid two-phase is used as the working fluid.

Claim 34 (new): The expander according to claim 31, wherein the expander is utilized in a heat pump cycle which uses carbon dioxide as the working fluid.

Claim 35 (new): The expander according to claim 32, wherein the expander is utilized in a heat pump cycle which uses carbon dioxide as the working fluid.

Claim 36 (new): The expander according to claim 33, wherein the expander is utilized in a heat pump cycle which uses carbon dioxide as the working fluid.

Claim 37 (new): The expander according to claim 34, wherein a shaft of said expander is directly connected to a shaft of a compressor.

Hiroshi HASEGAWA, et al.

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Claim 38 (new): The expander according to claim 35, wherein a shaft of said expander is directly connected to a shaft of a compressor.

Claim 39 (new): The expander according to claim 36, wherein a shaft of said expander is directly connected to a shaft of a compressor.